

Art Unit: ***

Clmpto

05/18/01

fpm

08/02/05

Claims 1-15 canceled

Claims 16-30

16. (NEW) A humanized antibody specific for HBV surface antigen pre-S1, containing a humanized heavy chain variable region which comprises an amino acid sequence described by SEQ ID NO: 20.

17. (NEW) A humanized antibody specific for HBV surface antigen pre-S1, containing a humanized heavy chain variable region which comprises an amino acid sequence described by SEQ ID NO: 21.

18. (NEW) The humanized antibody of claim 17, wherein the amino acid sequence of the humanized heavy chain variable region is modified from SEQ ID NO: 21 by at least one amino acid substitution selected from the group comprising:

Lys ¹² → Val ¹² ,	Thr ²⁸ → Ala ²⁸ ,	Thr ³⁰ → Ser ³⁰ ,
Met ⁴⁸ → Ile ⁴⁸ ,	Arg ⁶⁷ → Lys ⁶⁷ ,	Val ⁶⁸ → Ala ⁶⁸ ,
Met ⁷⁰ → Leu ⁷⁰ ,	Val ⁷⁹ → Ala ⁷⁹ ,	and Tyr ⁹⁵ → Phe ⁹⁵ .

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19. (NEW) A humanized antibody specific for HBV surface antigen pre-S1, containing a humanized light chain variable region which comprises an amino acid sequence described by SEQ ID NO: 23.

20. (NEW) A gene encoding a humanized heavy chain which comprises a humanized heavy chain variable region having an amino acid sequence selected from the group consisting of: the amino acid sequence described by SEQ ID NO: 20; the amino acid sequence described by SEQ ID NO: 21; and the amino acid sequence of SEQ ID NO: 21 which is modified by at least one amino acid substitution selected from the group comprising: Lys¹² → Val¹², Thr²⁸ → Ala²⁸, Thr³⁰ → Ser³⁰, Met⁴⁸ → Ile⁴⁸, Arg⁶⁷ → Lys⁶⁷, Val⁶⁸ → Ala⁶⁸, Met⁷⁰ → Leu⁷⁰, Val⁷⁹ → Ala⁷⁹, and Tyr⁹⁵ → Phe⁹⁵.

21. (NEW) The gene of claim 20, wherein the humanized heavy chain variable region comprises an amino acid sequence described by SEQ ID NO: 20.

22. (NEW) The gene of claim 20, wherein the humanized heavy chain variable region comprises an amino acid sequence described by SEQ ID NO: 21.

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23. (NEW) A gene encoding a humanized light chain which contains a humanized light chain variable region comprising an amino acid sequence described by SEQ ID NO: 23.
24. (NEW) An expression vector containing the gene of claim 20.
25. (NEW) The expression vector of claim 24, which is designated pCMV-HKR127HC (Accession Number: KCTC 0531BP).
26. (NEW) The expression vector of claim 24, which is designated pCMV-HKR127(III)HC (Accession Number: KCTC 0691BP).
27. (NEW) An expression vector containing the gene of claim 23.
28. (NEW) The expression vector of claim 27, which is designated pKC-dhfr-HKR127 (Accession Number: KCTC 0529BP).

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29. (NEW) A pharmaceutical composition containing a humanized antibody specific for HBV

surface antigen pre-S1, wherein the humanized antibody comprises:

- id
- (a) a humanized heavy chain variable region which comprises an amino acid sequence described by SEQ ID NO: 20,
 - (b) a humanized heavy chain variable region which comprises an amino acid sequence described by SEQ ID NO: 21;
 - (c) a humanized heavy chain variable region which comprises an amino acid sequence of SEQ ID NO: 21 which is modified by at least one amino acid substitution selected from the group comprising: Lys¹² → Val¹², Thr²⁸ → Ala²⁸, Thr³⁰ → Ser³⁰, Met⁴⁸ → Ile⁴⁸, Arg⁶⁷ → Lys⁶⁷, Val⁶⁸ → Ala⁶⁸, Met⁷⁰ → Leu⁷⁰, Val⁷⁹ → Ala⁷⁹, and Tyr⁹⁵ → Phe⁹⁵, or
 - (d) a humanized light chain variable region comprising an amino acid sequence described by SEQ ID NO: 23

30. (NEW) A method of protecting against HBV infection or treating chronic hepatitis B, comprising administering the pharmaceutical composition of claim 29.